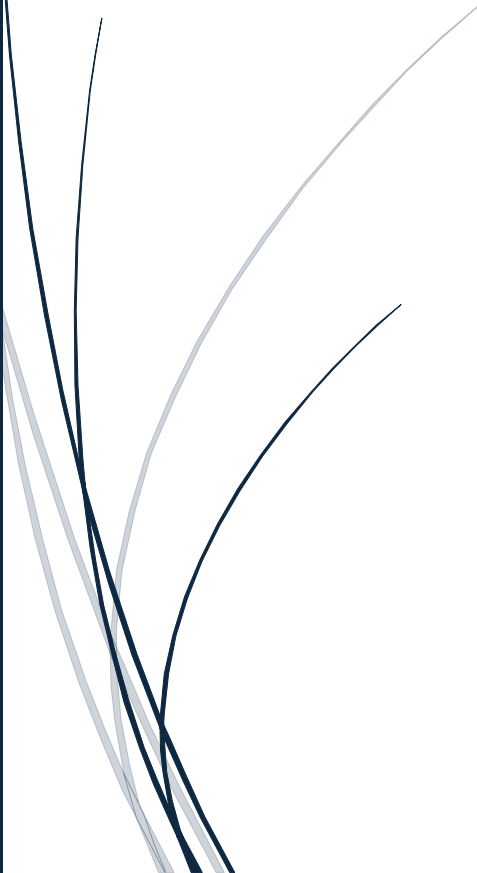




8/17/2024

Big Data & Data Engineering Group Assignment

Group Two

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EMERALD INTERNATIONAL COLLEGE

DATA ANALYSIS REPORT: MEDICAL INFORMATION DASHBOARD

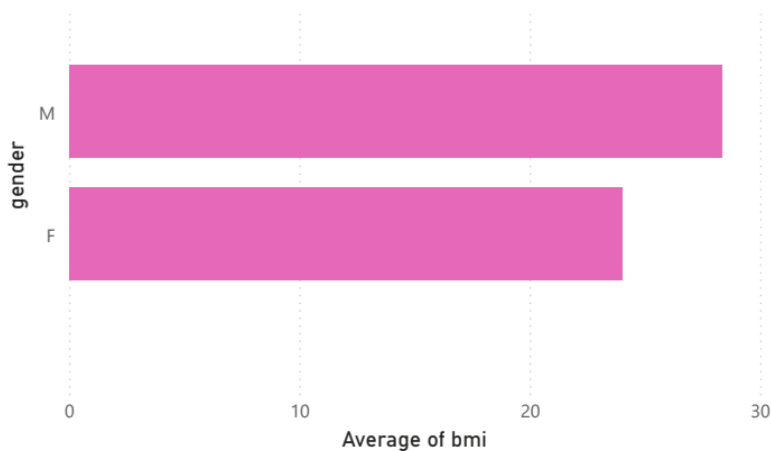
OVERVIEW

This report presents a data analysis of key medical parameters from patient records, visualized using Power BI. The analysis focuses on understanding the relationships between body mass index (BMI), blood pressure, cholesterol levels, and demographic variables such as gender and race.

KEY FINDINGS

1. MEAN BMI BY GENDER

- The average BMI varies between male and female patients:



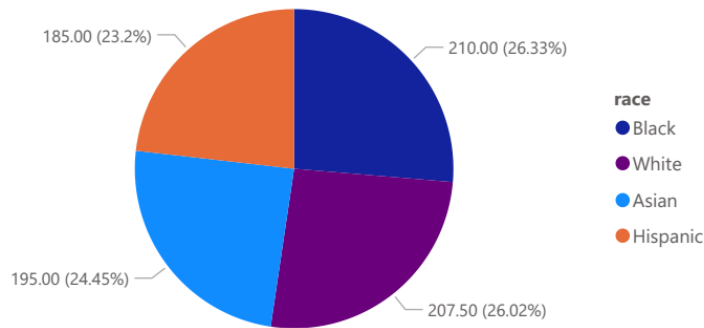
- Male: Higher mean BMI compared to females.
- Female: Slightly lower mean BMI.

This suggests gender-based differences in BMI, which could inform tailored interventions for managing weight-related health risks.

2. AVERAGE CHOLESTEROL BY RACE

- Cholesterol levels vary across different racial groups:
 - Black: 210.00 (26.33%)
 - White: 207.50 (26.02%)
 - Asian: 195.00 (24.45%)
 - Hispanic: 185.00 (23.20%)

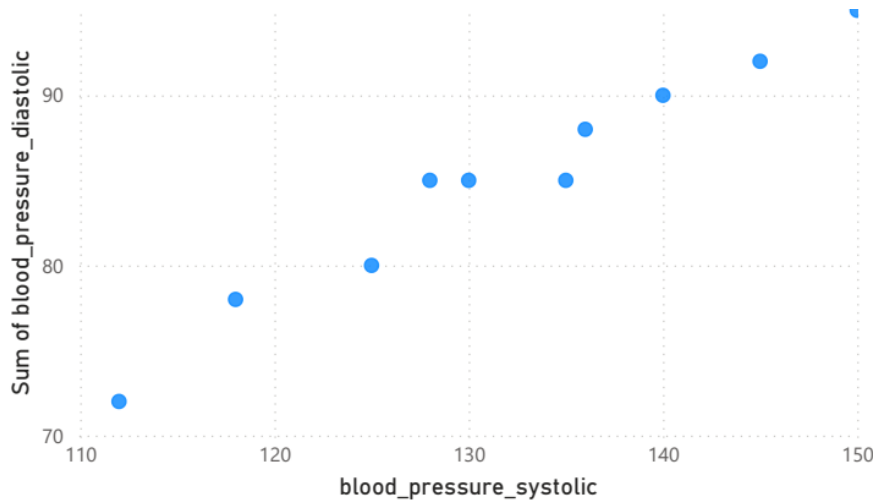
Average Cholesterol by Race



The data highlights that Black and White patients exhibit higher average cholesterol levels compared to other groups. This could indicate the need for focused strategies in cholesterol management based on racial disparities.

3. RELATIONSHIP BETWEEN SYSTOLIC AND DIASTOLIC BLOOD PRESSURE

- A positive correlation exists between systolic and diastolic blood pressure readings:
- As systolic pressure increases, diastolic pressure shows a similar upward trend.

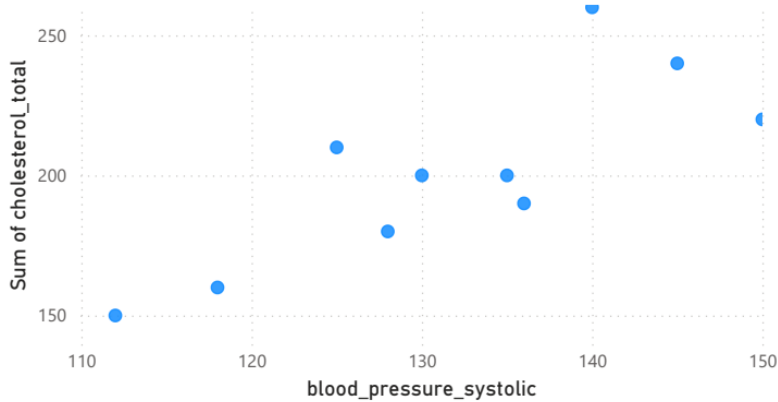


This relationship aligns with expected physiological patterns and can help in identifying patients at risk for hypertension.

4. TREND ANALYSIS: SYSTOLIC PRESSURE VS. CHOLESTEROL

- The analysis shows a relationship between systolic blood pressure and total cholesterol:
- Higher systolic pressure tends to be associated with elevated cholesterol levels.

Trend - Systolic Pressure vs Cholesterol



This trend suggests that managing cholesterol could be crucial for controlling blood pressure in patients.

CONCLUSIONS AND RECOMMENDATIONS

- GENDER-SPECIFIC INTERVENTIONS:

Given the differences in BMI between genders, healthcare providers should consider personalized weight management programs.

- TARGETED CHOLESTEROL MANAGEMENT:

The higher cholesterol levels observed in Black and White patients suggest the need for culturally tailored interventions.

- BLOOD PRESSURE MONITORING:

The correlation between systolic and diastolic pressures reinforces the importance of regular blood pressure monitoring for early detection and prevention of cardiovascular diseases.

- HOLISTIC CARDIOVASCULAR HEALTH STRATEGY:

Managing both cholesterol and blood pressure is essential for comprehensive cardiovascular care.